by the Chicago office and the Central Office at Washington to all States, except a portion of Montana, where its appearance could not be foreseen. Additional warnings were sent to all districts threatened with the advice that the storm and cold wave would be unusually severe. Press reports indicate that large numbers of cattle were saved in the Western States by the warnings, and that other interests were greatly benefited. The gale which attended the severe storm which preceded the advance of the cold wave was very high on the Lakes, and all vesselmen remained in port, except when it was possible for stanch craft to move along the lee shores.—*H. J. Cox, Forecast Official.*

SAN FRANCISCO FORECAST DISTRICT.

No marked or destructive weather changes or conditions were reported in the Pacific coast forecasting districts.

GALVESTON FORECAST DISTRICT.

Mr. I. M. Cline, local forecast official and section director, Galveston, Tex., has submitted the following report in connection with special temperature warnings issued November 21, 1898:

The following warning was issued at 4 p. m.: "Temperature will probably fall to 30° within 100 miles of Galveston and to 42° at Galveston Tuesday."

All sugar planters and truck growers to the coast line were advised over the telegraph and long-distance telephone to protect their crops and they acted without delay. The minimum temperature on Tuesday, the 22d, fell to and below freezing throughout the interior of the State and reached 34.5° at Galveston. Many acknowledgments of the value of the warnings were received, and cane and vegetables to the value of many thousands of dollars were reported saved.

AREAS OF HIGH AND LOW PRESSURE.

During November the paths of nine highs and of fourteen lows were sufficiently well defined to be traced on Charts I and II. On these charts a circle is placed at the position of each center of high or low pressure at 8 a. m. and 8 p. m., eastern time, with the date on the outside of the circle, and the reading of the barometer on the inside. The accompanying table exhibits the principal facts regarding the first and last appearance of the highs and lows, their duration, and apparent velocity.

Highs.—There seemed to be a rather permanent high pressure area on the middle Pacific coast, and some of the highs appeared to originate or separate from this permanent condition. Nos. VII and VIII were first noted to the north of Montana. The general tendency of the highs was along a lower parallel than in October. No. I disappeared in the middle Rocky Mountain region. Nos. III, V, and VII were last seen over Newfoundland, and the rest disappeared off the middle Atlantic coast. The temperature conditions accompanying these highs were quite moderate. On the 8th, as No. IV passed across the middle Rocky Mountain region, there was a fall of 30° in twenty-four hours at Denver in the morning, and of 34° in the evening at Pueblo. The severest cold wave of the month accompanied high area No. VII, and in this area the highest absolute barometer readings of the month were noted. On the evening of the 20th Denver experienced a fall in temperature of 50° in twenty-four hours, and to 12°. On the morning of 21st Denver reported a fall of 54°, and to 4°. On evening of 21st the cold wave had moved rapidly eastward, Springfield, Mo., experiencing a fall of 52°, and to 12°. The next morning the same station reported a fall of 44°, and to 12°. On evening of 22d Chicago reported a fall of 42°, and to 14°, and Cincinnati had a fall of 42°, and to 22°. On morning of 23d Columbus and Cleveland reported a fall of 36°, and to 20° and 18° respectively.

Lows.—The month was very prolific in low areas, no less than fourteen having been charted. Nine of these began to the north of Montana; one, No. XI, in the Red River Valley; Nos. IV and VI in Arizona; and X and XIV on the south Atlantic coast. The general track of these lows was along the north border of the United States, and ten of them were last noted off Nova Scotia or over Newfoundland. No. XIII was last seen in Ontario. Nos. V, XI, and XII in the Red River Valley, and VI in the central Gulf.

The highest winds of the month were reported as follows: As storm No. II approached Lake Superior, afternoon of 4th, a south wind of 60 miles an hour occurred at Chicago. As the same storm passed the lower Lake region it caused a west wind of 68 miles at Buffalo. On the afternoon of 11th, as IV passed to the north Atlantic coast, it caused a northwest gale of 56 miles at New York City. On the afternoon of 21st, as No. IX approached Lake Michigan, Duluth experienced a northwest wind of 52 miles, and Grand Haven the same velocity from the southeast. On the evening of 26th, as storm No. XI passed up the middle Atlantic coast, Block Island reported a northeast wind of 60 miles and accompanying the same storm the next morning Hatteras and New York City reported a northwest wind of 56 miles, Sandy Hook a northeast wind of 60 miles, Boston a north wind of 56 miles, and Eastport a northeast wind of 56 miles.—*H. A. Hazen, Professor.*

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long W.	Length.	Duration.	Daily.	Hourly.
High areas.		°	°		°	°	*Miles.*	*Days.*	*Miles.*	*Miles.*
I	*31, p. m.	43	127	2, p. m.	39	106	1,210	2.0	605	25.2
II	3, p. m.	37	124	8, p. m.	37	75	3,540	5.0	708	29.5
III	6, p. m.	41	126	10, p. m.	48	55	3,720	4.0	930	38.7
IV	7, p. m.	43	123	14, a. m.	41	69	3,060	6.5	471	19.6
V	11, p. m.	43	120	18, a. m.	47	56	4,260	6.5	655	27.3
VI	15, p. m.	42	121	21, p. m.	36	73	3,070	6.0	512	21.3
VII	18, p. m.	54	117	26, p. m.	47	61	3,480	8.0	435	18.1
VIII	23, p. m.	52	108	29, a. m.	38	73	2,430	5.5	442	18.3
IX	26, p. m.	42	116	30, p. m.	31	78	3,030	4.0	757	31.6
Total							27,800	47.7	5,515	229.6
Mean of 9 paths							3,089		613	25 5
Mean of 47.5 days									585	24.4
Low areas.										
I	*29, p. m.	47	125	2, p. m.	48	66	3,030	4.0	757	31.6
II	1, p. m.	55	118	7, p. m.	47	54	3,480	6.0	580	24.2
III	6, a. m.	52	120	8, p. m.	49	69	2,580	2.5	1,032	43.0
IV	7, a. m.	32	114	11, p. m.	48	59	3,480	4.5	580	24.2
V	9, p. m.	55	114	11, a. m.	52	96	780	1.5	520	21.7
VI	10, p. m.	34	114	13, a. m.	29	93	1,290	2.5	516	21.5
VII	11, p. m.	53	113	14, p. m.	49	55	2,670	3.0	890	37.1
VIII	16, p. m.	53	118	20, p. m.	47	56	3,270	4.0	817	34.1
IX	18, a. m.	51	123	23, p. m.	42	67	3,050	5.5	555	23.1
X	23, a. m.	34	76	25, p. m.	46	58	1,350	2.5	540	22.5
XI	24, p. m.	49	99	29, a. m.	44	58	2,880	4.5	640	26.7
XII	25, p. m.	52	116	27, a. m.	52	97	810	1.5	540	22.5
XIII	27, a. m.	52	122	30, a. m.	47	81	1,830	3.0	610	25.4
XIV	29, a. m.	31	80	†1, p. m.	44	60	1,890	2.5	756	31.5
Total							32,390	47.5	9,383	389.1
Mean of 14 paths							2.314		667	27.8
Mean of 47.5 days									682	28.4

* October. † December.

RIVERS AND FLOODS.

The annual rise appears to have set in during the latter half of the month, except in the Missouri and upper Mississippi rivers, where steady rises are not the rule during the winter season. The Ohio and its tributaries were the first to rise, the crest of the highest water reaching Parkersburg on the 14th, Cincinnati on the 17th, and Cairo on the 20th, and thence extending down the Mississippi. The highest waters

in the Arkansas and Red rivers occurred near the close of the month. The general conditions are graphically shown on the hydrograph for the month. (See Chart V.) The stage of water continued satisfactory on all the navigable rivers, and navigation was continued in the upper rivers until the channels became frozen over. The upper Missouri was the first to freeze, and next the Des Moines River. On the 22d ice formed along the banks of the Des Moines, and on the 23d the river was frozen over with ice 2 inches thick. It again opened, however, on the last day of the month.

In the Mississippi there was running ice as far south as Grafton. Light ice commenced running on the 22d at Reads Landing, and on the 23d was also running as far south as Keokuk, reaching Grafton on the 27th. On the 24th ice was forming in the Des Moines rapids, and on the 26th navigation was entirely closed along the river, above the mouth of the Des Moines. The earliest dates of complete freezing over were as follows: Red Wing, 22d; North McGregor, 24th; La Crosse, 26th; and Leclaire, 26th. On this latter date there was also an ice gorge at Burlington. The upper Missouri was frozen over at Pierre on the 22d, after ice had been running for a dozen days. In the lower Missouri there was floating ice from the 22d until the end of the month, and there were temporary blockades at Kansas City on the 24th, 29th, and 30th.

The highest and lowest water, mean stage, and monthly range at 117 river stations are given in the accompanying table. Hydrographs for typical points on seven principal rivers are shown on the Chart. The stations selected for charting are: Keokuk, St. Louis, Cairo, Memphis, and Vicksburg, on the Mississippi; Cincinnati, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.—*H. C. Frankenfield, Forecast Official.*

Heights of rivers referred to zeros of gauges, November, 1898.

Stations.	Distance to mouth of river.	Danger line on gauge.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Mississippi River.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
St. Paul, Minn	1,957	14	3.9	1-2	3.1	14-22	3.4	0.8
Reads Landing, Minn	1,887	12	2.1	1-2	—0.9	29-30	1.2	3.0
La Crosse, Wis	1,822	12	3.7	1	2.4	20-23	2.9	1.3
North McGregor, Iowa	1,762	18	3.1	1	0.1	26	2.2	3.0
Dubuque, Iowa	1,702	15	3.2	2	0.1	27	2.4	3.1
Leclaire, Iowa	1,612	10	1.8	2-3	0.5	26	1.4	1.3
Davenport, Iowa	1,596	15	2.8	1-7, 10, 11	— 0.4	30	2.3	3.2
Galland, Iowa	1,475	8	1.5	6,7	0.5	29,30	1.3	1.0
Keokuk, Iowa	1,466	14	2.2	6	0.4	28-30	1.5	1.8
Hannibal, Mo	1,405	17	3.4	6,7	1.2	30	2.7	2.2
Grafton, Ill	1,307	23	6.1	12	4.4	30	5.2	1.7
St. Louis, Mo	1,264	30	9.0	1	5.5	20,21	6.8	3.5
Chester, Ill	1,189	30	6.3	1	3.0	22,23	4.2	3.3
Cairo, Ill	1,073	45	19.9	20,21	12.2	10	16.7	7.7
Memphis, Tenn	843	33	12.5	23	7.2	13	10.2	5.3
Helena, Ark	767	42	18.8	24	11.7	14	15.5	7.1
Arkansas City, Ark	635	42	19.2	25	13.2	16	16.8	6.0
Greenville, Miss	595	42	15.7	26	10.8	6,7	13.5	4.9
Vicksburg, Miss	474	45	17.0	29	11.6	18	14.3	5.4
New Orleans, La	108	16	6.0	30	3.8	1	5.2	2.2
Arkansas River.								
Wichita, Kans	720	10	1.5	25-28	1.0	6	1.2	0.5
Fort Smith, Ark	345	22	7.4	24,26	2.8	13,14,18,19	4.1	4.6
Dardanelle, Ark	250	21	7.2	27	1.9	20,21	3.5	5.3
Little Rock, Ark	170	23	8.7	27	3.5	19-21	5.0	5.2
White River.								
Newport, Ark	150	26	10.5	28	3.6	21	5.7	6.9
Des Moines River.								
Des Moines, Iowa	150	19	3.3	21,22	2.8	8-13	3.0	0.5
Illinois River.								
Peoria, Ill	135	14	10.0	23	7.1	8,9	8.4	2.9
Missouri River.								
Bismarck, N. Dak	1,201	14	2.7	21,26	2.3	9,10	2.5	0.4
Pierre, S. Dak	1,006	14	2.4	1-13	1.7	21	2.3	0.7
Sioux City, Iowa	676	19	5.8	1	5.6	10,16-21	5.7	0.2
Omaha, Nebr	561	18	6.5	1-5	5.0	22	6.3	1.5
St. Joseph, Mo	373	10	3.4	28,29	0.8	16,17	1.4	2.6
Kansas City, Mo	280	21	6.5	22,23	5.4	29	6.0	1.1
Boonville, Mo	191	20	7.1	24	3.2	30	5.3	3.9
Hermann, Mo	95	24	8.8	25	4.1	21	5.5	4.7
Ohio River.								
Pittsburg, Pa	966	22	15.6	12	3.2	29,30	6.5	12.4
Davis Island Dam, Pa	960	25	15.0	12	4.9	6	7.7	10.1
Wheeling, W. Va	875	36	21.1	13	5.6	6	9.5	15.5
Parkersburg, W. Va	785	36	20.8	14	7.0	6	10.7	13.8
Point Pleasant, W. Va	703	39	22.0	14	5.6	6	11.7	16.4
Catlettsburg, Ky	651	50	25.7	15	7.5	6	14.7	18.2

Heights of rivers above zeros of gauges—Continued.

Stations.	Distance to mouth of river.	Danger line on gauge.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Ohio River—Cont'd.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
Portsmouth, Ohio	612	50	25.8	15	8.5	7,8	15.4	17.3
Cincinnati, Ohio	499	50	26.8	17	10.3	9	17.6	16.5
Louisville, Ky	367	28	10.5	17,18	6.4	9	8.3	4.1
Evansville, Ind	184	35	19.9	19	9.0	9	14.2	10.9
Paducah, Ky	47	40	16.0	19,20	7.5	9,10	11.9	8.5
Allegheny River.								
Warren, Pa	177	7	8.0	11	1.1	6	3.2	6.9
Oil City, Pa	123	13	8.5	12	2.0	30	3.7	6.5
Parkers Landing, Pa	73	20	10.0	12	1.7	5	4.0	8.3
Freeport, Pa	26	20	15.4	12	3.3	6	6.5	12.1
Conemaugh River.								
Johnstown, Pa	64	7	3.8	11	1.4	30	2.1	2.4
Red Bank Creek.								
Brookville, Pa	35	8	3.2	11	1.0	1-6,9	1.4	2.2
Beaver River.								
Ellwood Junction, Pa	10	14	5.2	11	0.7	5	1.6	4.5
Cumberland River.								
Burnside, Ky	434	50	14.3	12	2.3	5	5.2	12.0
Carthage, Tenn	257	30	12.2	14	2.5	5	3.3	9.7
Nashville, Tenn	175	40	15.3	15	3.9	5	8.0	11.4
Great Kanawha River.								
Charleston, W. Va	61	30	11.3	21	4.8	1,4,29,30	6.8	6.5
New River.								
Hinton, W. Va	95	14	4.6	21	2.2	6-11	2.7	2.4
Licking River.								
Falmouth, Ky	30	25	7.0	12	1.2	30	2.7	5.8
Miami River.								
Dayton, Ohio	69	18	4.5	11	1.3	4,5,27,28	2.2	3.2
Monongahela River.								
Weston, W. Va	161	18	3.1	11	— 0.2	5,28	0.4	3.3
Fairmont, W. Va	119	25	6.8	21	1.1	5	2.7	5.7
Greensboro, Pa	81	18	12.0	11,12	7.0	28,30	8.6	5.0
Lock No. 4, Pa	40	28	14.7	12	7.1	6	9.1	7.6
Cheat River.								
Rowlesburg, W. Va	36	14	5.6	12	2.2	5,9	3.6	3.4
Youghtogheny River.								
Confluence, Pa	59	10	5.0	11	1.9	5	3.0	3.1
West Newton, Pa	15	23	4.6	11	0.9	29	1.8	3.7
Muskingum River.								
Zanesville, Ohio	70	20	15.1	12	7.3	4,5	9.6	7.8
Tennessee River.								
Kingston, Tenn	534	25	3.6	23-26	1.6	5	2.5	2.0
Chattanooga, Tenn	430	33	6.9	24	3.9	5,6	5.0	3.0
Bridgeport, Ala	390	24	5.1	24	2.2	5,6	3.2	2.9
Florence, Ala	220	16	4.9	25	1.9	8,9	2.9	3.0
Johnsonville, Tenn	94	21	6.9	27	3.2	9	4.5	3.7
Clinch River.								
Speers Ferry, Va	156	20	2.2	20	—0.4	5	0.4	2.6
Clinton, Tenn	46	25	8.7	22	3.5	3,4	5.4	5.2
Wabash River.								
Mount Carmel, Ill	50	15	11.5	15	3.1	5	6.0	8.4
Red River.								
Arthur City, Tex	688	27	6.6	23	4.3	19-22	4.7	2.3
Fulton, Ark	565	28	8.4	26	2.3	7,8	4.0	6.1
Shreveport, La	449	29	5.1	30	— 0.1	9	1.9	5.2
Alexandria, La	139	33	4.1	23	— 0.9	8	1.7	5.0
Atchafalaya Bayou.								
Melville, La	100*	31	19.8	30	13.8	1,2	16.7	6.0
Ouachita River.								
Camden, Ark	340	39	13.2	13	4.0	8	7.5	9.2
Monroe, La	100	40	19.4	18,19	4.2	8	13.5	15.2
Yazoo River.								
Yazoo City, Miss	80	25	0.7	1,23	—1.0	9,10	—0.1	0.8
Flint River.								
Albany, Ga	80	20	16.1	23	1.2	8	6.5	14.9
Cape Fear River.								
Fayetteville, N. C	100	38	12.2	21	3.5	13	6.4	8.7
Columbia River.								
Umatilla, Oreg	270	25	2.6	23	1.9	16	2.3	0.7
The Dalles, Oreg	166	40	3.0	23	2.0	14,15	2.6	1.0
Willamette River.								
Albany, Oreg	99	20	16.4	30	1.0	15	5.2	15.4
Portland, Oreg	10	15	7.0	20	1.2	8-10	3.7	5.8
Edisto River.								
Edisto, S. C	75	6	5.5	22	2.2	14	4.0	3.3
James River.								
Lynchburg, Va	257	18	4.0	20	1.3	10-12	2.0	2.7
Richmond, Va	110	12	2.0	22	0.5	11-16	1.0	1.5
Alabama River.								
Montgomery, Ala	265	35	14.2	20	2.7	5,6	7.0	11.5
Selma, Ala	212	35	16.9	21	2.9	7	9.0	14.0
Coosa River.								
Rome, Ga	225	30	7.0	24	2.0	5	3.3	5.0
Gadsden, Ala	144	18	7.0	23,24	1.8	5-8,12	3.4	5.2
Tombigbee River.								
Columbus, Miss	285	33	2.1	23	—3.2	9	—1.4	5.3
Demopolis, Ala	155	35	12.0	26	—2.0	9	3.2	14.0
Black Warrior River.								
Tuscaloosa, Ala	90	38	11.7	24	0.0	5	3.0	11.7
Pedee River.								
Cheraw, S. C	145	27	10.5	20	1.5	6	3.8	9.0
Black River.								
Kingstree, S. C	60	12	10.7	30	1.9	12-16	4.2	8.8
Lumber River.								
Fairbluff, N. C	10	6	5.1	27	0.8	9	2.6	4.3
Lynch Creek.								
Effingham, S. C	35	12	13.8	26	3 7	7,8	7.4	10.1
Potomac River.								
Harpers Ferry, W. Va	170	16	3.7	1	2.4	26,27	2.7	1.3
Roanoke River.								
Clarksville, Va	155	12	3.8	1	1.0	11	1.6	2.8
Sacramento River.								
Red Bluff, Cal	241	23	1.2	30	— 0.7	6	—0.2	1.9
Sacramento, Cal	70	25	8.2	22	7.5	11-19	7.7	0.7

Heights of rivers above zeros of gauges—Continued.

Stations.	Distance to mouth of river.	Danger line on gauge.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Santee River.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
St. Stephens, S.C.....	50	12	8.1	27,28	4.5	13,14	7.0	3.6
Congaree River.								
Columbia, S.C.....	37	15	2.8	18	0.4	4,5	1.0	2.4
Wateree River.								
Camden, S.C.....	45	24	13.0	17	4.3	13	6.9	8.7
Savannah River.								
Augusta, Ga.....	130	32	17.4	17	7.4	11	9.8	10.0

Heights of rivers above zeros of gauges—Continued.

Stations.	Distance to mouth of river.	Danger line on gauge.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Susquehanna River.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
Wilkesbarre, Pa.....	178	14	12.0	12	3.0	5-10,29,30	5.2	9.0
Harrisburg, Pa.....	70	17	8.8	13	2.5	8-10	4.2	6.3
Juniata River.								
Huntingdon, Pa.....	80	24	5.5	11	3.5	7-10	3.9	2.0
W. Br. of Susquehanna.								
Williamsport, Pa.....	35	20	9.4	12	1.8	8-10,29,30	3.3	7.6
Waccamaw River.								
Conway, S.C.....	40	7	4.1	26,27,30	1.4	12	2.7	2.7

*Distance to Gulf of Mexico. †Record for 30 days.

THE WEATHER OF THE MONTH.

By A. J. HENRY, Chief of Division of Records and Meteorological Data.

The statistical aspects of the weather of the month are presented in the tables which form the closing part of this REVIEW. Table I, in particular, contains numerous details that are important in the study of climatology. The numerical values in the tables have been generalized in a number of cases, the results appearing on Charts Nos. III to IX, inclusive.

PRESSURE AND WIND.

Normal conditions.—The geographic distribution of normal barometric readings at sea level and under local gravity for November is shown by Chart V of the MONTHLY WEATHER REVIEW for November, 1893.

Normal pressure in November is highest over the middle Plateau region, where it is above 30.20 inches; it is above 30.15 over the interior of the middle and east Gulf and south Atlantic States. Normal pressure is lowest in November over the lower Colorado Valley and over the Gulf of Saint Lawrence, where it is below 30.00 inches.

As compared with October there is generally an increase of normal pressure, the increase being greatest over the middle Plateau region, where it exceeds .10 inch. The winter highs of the middle Plateau region and the south Atlantic States are now firmly established.

In November the prevailing winds of the south Atlantic States blow from the north, inclining slightly to the northeast on the Florida peninsula. Passing westward through the Gulf coast States, easterly or northeasterly winds prevail until central Texas is reached. Here the prevailing direction becomes southwesterly, which direction is preserved over a considerable area extending northeasterly to Arkansas and again from the middle Mississippi Valley to the Lake region. The prevailing winds of the upper Lakes, the Northwest, and the eastern slope of the Rocky Mountains blow from the northwest. On the Pacific coast the prevailing winds blow from the south from Oregon northward and from the north over California and portions of Arizona.

The current month.—The distribution of monthly mean pressure and the resultant winds are shown on Chart IV. The configuration of the isobars is in close accord with normal conditions, although both western and eastern highs are restricted somewhat in area. Pressure was below normal on the northeastern Rocky Mountain slope, the Lake region, New England, and the Canadian Maritime Provinces, although it is to be noted that pressure was reported .07 inch in excess at St. Johns, Newfoundland. As compared with the preceding month there was a rise in pressure over the southern three-fifths of the country and a fall over the remaining portion, the greatest decrease, .18 inch, occurring in Nova Scotia.

TEMPERATURE OF THE AIR.

Normal conditions.—The normal temperature of the air in the United States in November varies from about 74° at Key West, 61° at Jacksonville, 61° at New Orleans, 62° at Galveston, 59° at San Diego, to 37° at Eastport, 36° at Burlington, 38° at Buffalo, 38° at Detroit, 29° at Duluth, 21° at St. Vincent, 30° at Havre, 38° at Spokane, and 45° at Seattle, on Puget Sound. The warmest regions are the lower Rio Grande Valley and Florida; the coolest, Minnesota and North Dakota.

In studying the distribution of monthly mean temperatures it will be found very helpful to consult the charts at the end of this REVIEW, especially No. VI, Surface Temperatures, Maximum, Minimum, and Mean. This chart gives a very good idea of the variations of temperature with latitude and longitude, and also of the distribution of normal surface temperatures. Chart VI for any month will differ from a normal chart merely in the displacement or bending of the isotherms northward or southward according as the temperature of the particular locality is above or below the normal for the place and season.

The current month.—The month was devoid of abnormal conditions. Temperature continued low for the season over the Plateau region, Wyoming, parts of Montana, the Dakotas, and Kansas. Temperature was also below average in eastern Texas, the lower Mississippi Valley and Tennessee. Temperature was above average in Florida and the Lake region and also over small areas in Oregon and California.

Generally low temperatures prevailed, but the departures from the normal were not large, the greatest not exceeding 5° per day.

Two cold waves occurred during the month. The first one was widespread and rather severe for the season. On the morning of the 21st it had overspread the middle Missouri Valley, Kansas, northwestern Oklahoma and Indian Territory, and extreme northern Texas, causing a fall in temperature of from 30° to 50° from the middle Missouri Valley over the central Rocky Mountain districts and snow as far south as the panhandle of Texas. By the morning of the 22d the cold had reached the Gulf coast, extending thence in a northerly direction to the British Possessions. Minimum temperatures in the Gulf coast States were as follows: Texas, 23° at Fort Worth and 34° at Galveston; Louisiana, 25° at Shreveport and 34° at New Orleans; Mississippi, 26° at Vicksburg; Alabama, 26° at Montgomery and 31° at Mobile. The cold wave moved eastward during the succeeding twenty-four hours but the temperature fall was not so great in the lower Lake region and east of the Appalachians as it had been in the region to the westward. The second cold wave of the month moved